United States Department of Agriculture
National Agricultural Statistics Service

Iowa Ag News – Chemical Use

Soybeans: Fall 2017

Upper Midwest Regional Field Office · 210 Walnut Street Ste 833 · Des Moines IA 50309 · (515) 776-3400 · (800) 772-0825
fax (855) 281-9802· www.nass.usda.gov
Cooperating with the Iowa Department of Agriculture and Land Stewardship

May 11, 2018 *Media Contact: Greg Thessen*

The 2017 Agricultural Chemical Use Survey of soybean producers collected data about fertilizer and pesticide use as well as pest management practices in growing soybeans.

Fertilizer Use

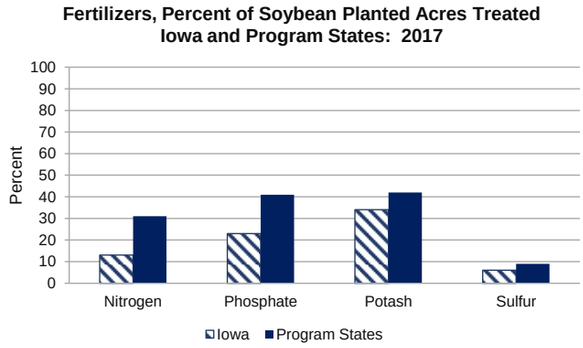
Fertilizer refers to a soil-enriching input that contains one or more plant nutrients, primarily nitrogen (N), phosphate (P_2O_5), and potash (K_2O). Of the three primary macronutrients, potash was the most widely used on soybeans acres planted in Iowa according to the latest USDA, National Agricultural Statistics Service – *Agricultural Chemical Use* report. Farmers applied potash to 34 percent of planted acres at an average rate of 104 pounds per acre per year. Macronutrients nitrogen and phosphate were applied at an average rate of 12 and 62 pounds per acre per year, respectively. The secondary macronutrient, sulfur, was applied to 6 percent of acres planted to soybeans.

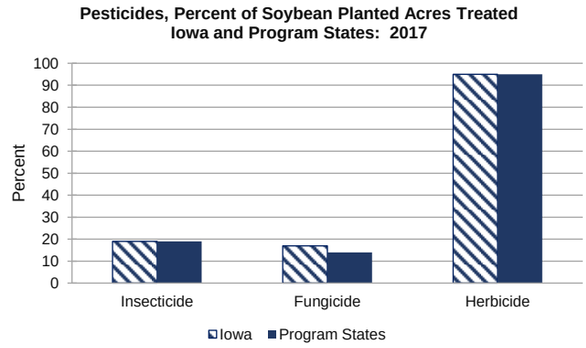
Pesticide Use

The pesticide active ingredients used on soybeans are classified in this report as herbicides (targeting weeds), insecticides (targeting insects), fungicides (targeting fungal disease) and other chemicals (targeting all other pests and other materials, including extraneous crop foliage). Herbicide active ingredients were applied to 95 percent of the soybean acres planted. Fomesafen sodium was the most widely used pesticide on soybean acres, but glyphosate isopropylamine salt was the active ingredient with the greatest total amount applied. Fungicides and insecticides were applied to 17 and 19 percent of soybean acres planted in Iowa.

	Iowa			Program States [1]		
	Planted acres treated (%)	Rate applied per year (pounds per acre)	Total pounds applied (1,000 pounds)	Planted acres treated (%)	Rate applied per year (pounds per acre)	Total pounds applied (1,000 pounds)
Fertilizer Use on Soybeans						
Nitrogen	13	12	14,400	31	18	468,300
Phosphate	23	62	145,000	41	52	1,771,200
Potash	34	104	357,100	42	91	3,207,900
Sulfur	6	13	8,100	9	15	112,200
Pesticide Use on Soybeans by Active Ingredient						
FUNGICIDE:						
Azoxystrobin	2	0.155	29	4	0.102	347
Fluxapyroxad	11	0.051	53	5	0.055	215
Propiconazole	2	0.156	26	3	0.095	212
Pyraclostrobin	12	0.115	135	5	0.121	552
TOTAL FUNGICIDE[2]	17		280	14		1,937
HERBICIDE:						
2,4-D, 2-EHE	18	0.737	1,302	13	0.609	6,690
2,4-D, Dimeth. Salt	4	0.511	223	6	0.608	3,007
Acetochlor	6	1.256	750	3	1.114	3,213
Chlorimuron-Ethyl	13	0.012	16	12	0.020	209
Clethodim	17	0.084	145	11	0.100	915
Cloransulam-Methyl	15	0.027	41	9	0.026	188
Dicamba; BAPMA	5	0.496	235	5	0.544	2,101
Dicamba, Digly. Salt	4	0.666	282	7	0.612	3,729
Dimethenamid-P	13	0.400	509	5	0.451	1,905
Fluazifop-P-Butyl	12	0.080	93	3	0.109	255
Flumioxazin	14	0.065	91	13	0.074	806
Fluthiacet-Methyl	1	0.004	1	3	0.005	12
Fomesafen Sodium	43	0.216	929	19	0.240	3,858
Glufosinate-Ammonium	8	0.445	335	13	0.587	6,424
Glyphosate	20	0.922	1,880	8	0.923	6,266
Glyphosate Dim. Salt	6	1.122	693	2	1.502	2,693
Glyphosate Iso. Salt	41	1.007	4,170	46	1.145	44,232
Glyphosate Pot. Salt	27	1.484	4,020	30	1.590	40,318
Imazethapyr	13	0.047	63	8	0.047	328
Metribuzin	12	0.236	289	18	0.256	3,726
Pendimethalin	4	1.016	360	1	1.012	1,060
Pyroxasulfone	21	0.097	201	10	0.125	1,034
S-Metolachlor	17	1.263	2,123	16	1.214	15,911
Saflufenacil	14	0.023	33	8	0.028	184
Sulfentrazone	29	0.185	542	22	0.179	3,309
Thifensulfuron	7	0.018	12	5	0.011	41
Trifluralin	5	0.863	411	2	0.887	1,201
TOTAL HERBICIDE[2]	95		19,887	95		161,144
INSECTICIDE:						
Bifenthrin	7	0.069	50	5	0.064	247
Chlorpyrifos	3	0.321	105	3	0.350	876
Esfenvalerate	2	0.039	7	(Z)	0.035	12
Imidacloprid	3	0.093	26	2	0.083	109
Lambda-Cyhalothrin	6	0.038	25	8	0.031	215
TOTAL INSECTICIDE[2]	19		221	19		2,735

[1] The 16 program states surveyed about soybeans in the 2017 ARMS were Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, and Wisconsin.
[2] Total Fungicide, Herbicide, and Insecticide includes pesticides that are not listed in this table. Pesticides were not listed if data were withheld to avoid disclosing data for individual operations, or the total was less than half the rounding unit.





Pest Management Practices: Rotating crops during the past 3 years was the top pest management practice on Iowa **soybean** acreage.

Pest Management Practices	Iowa		Program States [1]	
	% of area planted	% of operations	% of area planted	% of operations
Avoidance				
Crop or plant variety chosen for specific pest resistance	54	54	52	51
Planting locations planned to avoid cross infestation of pests	14	13	18	17
Planting or harvesting dates adjusted	19	19	19	18
Rotated crops during past 3 years	95	95	88	87
Row spacing, plant density, or row directions adjusted	26	28	20	19
Monitoring				
Diagnostic laboratory services used for pest detection via soil or plant tissue analysis	4	4	8	7
Field mapping data used to assist decisions	11	12	16	14
Scouted -				
-established process used	19	19	21	19
-for pests due to a pest advisory warning	10	10	12	11
-for pests due to a pest development model	4	5	8	7
-for pests or beneficial organisms-not scouted	6	7	4	5
-for pests or beneficial organism by conducting gen. observations while performing routine tasks	35	37	26	30
-for pests or beneficial organism by deliberately going to the crop acres or growing areas	59	56	70	65
Scouted for diseases	84	80	85	80
-by employee	(Z)	(Z)	3	2
-by farm supply company or chemical dealer	21	20	11	13
-by independent crop consultant or commercial scout	6	5	15	11
-by operator, partner, or family member	73	74	71	74
Scouted for insects & mites	88	85	88	83
-by employee	(Z)	(Z)	3	2
-by farm supply company or chemical dealer	21	19	11	13
-by independent crop consultant or commercial scout	5	5	14	11
-by operator, partner, or family member	74	76	72	75
Scouted for weeds	93	92	95	94
-by employee	(Z)	(Z)	2	2
-by farm supply company or chemical dealer	19	16	10	11
-by independent crop consultant or commercial scout	5	4	13	9
-by operator, partner, employee, or family member	76	79	74	78
Weather data used to assist decisions	61	61	67	66
Written or electronic records kept to track pest activity	30	27	35	30
Prevention				
Beneficial insect or vertebrate habitat maintained	11	13	9	9
Crop residues removed or burned down	8	7	13	14
Equipment & implements cleaned after field work to reduce spread of pests	27	26	41	40
Field edges, ditches, or fence lines were chopped, sprayed, mowed, plowed, or burned	56	53	53	50
Field left fallow previous year to manage insects	(Z)	1	1	1
Flamer used to kill weeds	1	1	(Z)	1
No-till or minimum till used	85	83	72	73
Plowed down crop residue using conventional tillage	20	16	24	24
Seed treated for insect or disease control after purchase	42	41	45	40
Water management practices used	5	8	6	6
Suppression				
Beneficial organisms applied or released	0	0	1	1
Biological pesticides applied	11	11	5	5
Buffer strips or border rows maintained to isolate organic from non-organic crops	15	12	7	7
Floral lures, attractants, repellants, pheromone traps, or biological pest controls used	1	1	(Z)	1
Ground covers, mulches, or other physical barriers maintained	47	44	42	40
Pesticides with different mechanisms of actions to keep pest from becoming resistant to pesticides	43	41	37	35
Scouting data compared to published information to assist decisions	31	29	26	23
Trap crop grown to manage insects	0	0	(Z)	(Z)

(Z) Less than half the rounding unit.

[1] The 16 program states surveyed about soybeans in the 2017 ARMS were Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, and Wisconsin.

Complete data from the Agricultural Chemical Use survey are available on the NASS website at
http://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Chemical_Use/